

REMARKS

Claims 1, 2, 4 and 7-10 are currently pending. Reconsideration of the above-identified application, in view of the following remarks, is respectfully requested.

Claims 1, 2, 4 and 7-10 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Great Britain Patent No. 1,386,645 ("GB '645"), in view of U.S. Patent No. 4,252,178 to Hudd ("Hudd").

GB '645 describes a mould for a cooling element, the cooling element having a cooling pipe therein. A prefabricated metal pipe is inserted into a mould, into which molten metal is poured or has already been poured. This prefabricated pipe is cooled until the molten metal around it solidifies. See GB '645 at, for example, page 2, lines 34-60.

The Office Action argues that GB '645 teaches "all aspects of the above claims except the use of copper mold walls, cooling pipes or a graphite lining plates." See Office Action at page 2, paragraph 2, lines 5-6. However, GB '645 also does not teach or suggest that the mould itself is equipped with cooling pipes or that the mould is lined with plates resistant to high temperatures which plates are fixed to the surface of the mould by means of underpressure, as recited in Claim 1.

Hudd does not cure the above-stated deficiencies of GB '645. Hudd describes a continuous casting slab mould having a body that is made of copper. The surfaces of the mold facing the melt are covered with a graphite slab liner (15). The graphite liner (15) is held close to the copper body by means of springs (20) and bolts (17). The bolts (17) attach to the graphite liner (15) by means of blind holes (16). The bolts pass through corresponding holes (18) in the copper body (1) and are provided with nuts (19) that compress coil springs (20) and pull the

graphite liner (15) into proximity with the copper body (1), leaving a small gap between the copper body (1) and the graphite liner (15).

Hudd does not teach or suggest the use of underpressure for any purpose, much less for attaching plates to a casting mould. The lining of Hudd is not secured by means of underpressure so that the liner is fixed to the surface of the mould, as recited in Claim 1. In contrast, the graphite liner of Hudd, as described above, is held in place by bolts and springs that resiliently bias the bolts outwardly to pull the graphite liner close to the copper body 1, leaving a small gap therebetween.” See Hudd at column 3, lines 40-43 and column 3, line 66- column 4, line 7.

In Hudd, the graphite plate and copper body are not in direct contact, but are separated by a gap that Hudd describes is filled with helium. In Hudd, a hole with tapped inlet (31) is drilled in the copper body (1), which connects to groove (32) at the copper to graphite interface. Hudd states, “[t]hrough this bore helium can be inserted to purge the gap between the copper and graphite to increase heat transfer across the gap.” See Hudd, column 3, line 66- column 4, line 4. That is, not only is underpressure not used in Hudd to attach heat resistant plates to copper plates, but in-fact, gas is actually inserted into a gap between the copper body and graphite plates of Hudd. Hudd’s teaching of a gap between the copper body and graphite plates and inserting gas into the gap not only does not teach or suggest but teaches away from, the use of underpressure for securing such plates wherein there is no gap.

In attempting to apply Hudd, the Office Action incorrectly relies on a statement in Applicants’ Specification at page 2, arguing “[a]s stated in the instant specification at page 2 for example, graphite plates will inherently attach themselves to the copper walls by means of

underpressure.” See Office Action at page 2, paragraph 2, lines 10-12. This statement is taken from Applicants’ description of their invention. It is not part of Applicants’ description of the prior art. It is wholly improper to rely on Applicants’ description of their invention as a prior art teaching, supporting a rejection of the claims under 35 U.S.C. §103.

The Office Action also argues that “it would have been obvious to one of ordinary skill in the art at the time the invention was made” to employ the materials described by Hudd in the construction of cooling element of GB ‘645 in order to “increase service life of the mold.” See Office Action at page 2, last sentence. However, Hudd teaches away from combination with GB ‘645, and Applicants respectfully submit that “[t]he level of skill in the art cannot be relied upon to provide the suggestion to combine references.” See MPEP §2143.01 (citing Al-Site Corp. v. VSI Int’l Inc., 174 F.3d 1308 50 USPQ 2d 1161 (Fed. Cir. 1999)).

Hudd states, “Continuous casting moulds are, of course, totally different from ordinary moulds, in which metal is poured into the mould to fill it and solidification takes place within the mould.” See Hudd, column 1, lines 18-21. That is, Hudd teaches that his continuous mould is “totally different” from the type described by GB ‘645, in effect teaching away from the combination of these references. While the cooling element in GB ‘645 may at some point be used in a continuous process, the process described by GB ‘645 for manufacturing the cooling element is *not* a continuous process.

Even if GB ‘645 were to be improperly combined with Hudd, the combination would not teach or suggest Applicants invention, as claimed. The aforementioned gap of Hudd would remain between a mold body and the graphite liner (15) in the combination, and would not be “fixed to the surface” by means of underpressure, as claimed in Claim 1. Rather, the

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graphite liner would be attached, in the combination, by bolts and springs leaving a small gap therebetween.

For at least the above reasons, neither GB '645 nor Hudd, alone or in combination, teaches or suggests a casting mould lined on the inside with plates resistant to high temperatures, "the plates resistant to high temperatures being fixed to the surface of the mould by means of underpressure," as claimed in independent Claim 1.

Accordingly, Claim 1 defines patentable subject matter over GB '645 and Hudd, alone or in combination. Claims 2, 4 and 7-10 depend from Claim 1 and therefore also define patentable subject matter over GB '645 and Hudd, alone or in combination. Withdrawal of the rejection applied to Claims 1, 2, 4 and 7-10 under 35 U.S.C. §103(a) as being unpatentable over GB '645 in view of Hudd is respectfully requested.

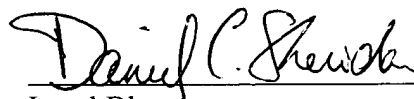
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CONCLUSION

In light of the foregoing, Applicants submit that all claims, as currently presented are patentable, and that this application is in condition for allowance.

Respectfully submitted,

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